

WORK PLAN

The purpose of the proposed project is to evaluate the existing water quality data that has been accumulated over the past sixty years and incorporate the existing data to design a monitoring program that can be utilized as an early warning system for water quality contamination in the Borrego Valley Aquifer. The end result will be an on-going water quality monitoring network that can be carried on by the Borrego Water District after the grant program period has ended. The information gained will be used to make important decisions regarding the future management of the aquifer.

Two important groups will be vital to the success of the program. The first is the Technical Professionals Group, U.S. Geological Survey staff, DWR technical staff and the San Diego County hydrogeologist. The only other public entity in project area is the County of San Diego who will be part of this group. The second group of equal importance is the local stakeholders group which will include the Anza-Borrego Desert State Park staff, groundwater pumpers in the valley, local agricultural interests and local golf course owners. There are no Native American tribal entities located in the Borrego Valley.

TASK 1: PROJECT SETUP

The work under this task will include signing the grant agreement with the DWR and the preparation of the contract with a California Registered Hydrogeologic Consultant (consultant). A list of approved vendors will also be compiled for project implementation. California Environmental Quality Act (CEQA) compliance will be addressed by the consultant and the Board of Directors of the Borrego Water District. Compliance with the California Labor Code will also be addressed at this point. The first meeting with U.S. Geological Survey, DWR technical staff and the San Diego County hydrogeologist (the Technical Professionals Group) will review the program and design the format for data input. An initial meeting with local stakeholders will discuss the project plan and solicit suggestions on the overall scope of work.

Deliverables: A signed contract with the DWR, a signed contract with the California Registered Hydrogeologic Consultant and a status report from both meetings to be included with the task report submitted to the Borrego Water District.

TASK 2: PREPARE EXISTING DATA

Under this task, the consultant will design the format of how the data will be input into the database. Next, District staff and the consultant will compile all of the existing data and the consultant will input the data into the database. Following the input, the consultant will utilize existing well location data from the 2009 Water Well Roundup and line each sampled well with the state well number and other pertinent location data from the files. Now, with all sampled well data coordinated with their State Well Numbers, the consultant will work with District and DWR records staff to align each well with the Water Well Drillers Report to determine the perforated zones from which the well was completed. Once all the data is collected, the well

sites will be mapped on a geographical information system (GIS) to portray well data locations in relation to other wells with water quality data.

Deliverables: The consultant will provide a database file with all historical water quality information, well site location data and "water well driller's report" data, in a format acceptable to USGS and DWR. A GIS shapefile and map of the well site locations will also be submitted. For landowner privacy purposes, well owner names and contact information will not be included in the database or map. All of the compiled sampling results will be provided to the State Water Quality Control Board's GAMA program, as required by the grant guidelines. A quarterly/task report will be written and submitted to the Borrego Water District and the DWR.

TASK 3: ANALYSIS OF EXISTING DATA

In this task, the consultant will meet with the Technical Professional Group, discuss the analysis of the existing data and determine which parameters the new monitoring program will track. Any data platform (software) must be readily available to the Borrego Water District so the program can be carried on after the grant period has ended. Next the consultant will meet with the stakeholders group to explain the aspects of the new program and receive input from the group. Utilizing the input from both groups, the hydrogeologist will plot where the data gaps exist and begin the process of finding other wells to be incorporated into the sampling program.

Deliverables: A GIS map will be generated by the consultant depicting all of the sites to be sampled in the new monitoring program along with a written report justifying the well selection process. A quarterly/task report will be written and submitted by the consultant to the Borrego Water District and the DWR.

TASK 4: DESIGN THE PROGRAM

The consultant will utilize all data gathered from the technical professionals and the stakeholders to design a water quality monitoring program for the Borrego Valley. The program will feature what constituents to be sampled, the sampling protocol, the laboratory to be utilized for processing the samples and determine sites where additional sampling will be required to adequately build a monitoring program that will work as an early warning system as the water table recedes. The consultant will work with local stakeholders, District legal counsel and Borrego Water District staff in creating a right-of-entry document to be signed by all private landowners who agree to participate in the program. The monitoring program must be consistent with the requirements of the Groundwater Quality Monitoring Act of 2001. The program must also allow for data integration into the statewide monitoring including the Groundwater Ambient Monitoring and Assessment Program (GAMA). The proposed program will be vetted with the Technical Professionals Group to ensure the program fulfills the needs as outlined by the group. After this follow up meeting the new sampling sites will be finalized. If any of the identified wells require down-hole video of perforations or any pumps need to be pulled for monitoring access, contractors will be lined up for the work at this time. All inactive wells will be equipped with a locking lid mechanism negate any possible contamination or

safety concerns. Also, determine which wells will need to be pumped with a sampling pump or if the well is active, arrange the sampling schedule with the well owner.

Deliverables: The consultant will provide a written water quality monitoring plan which includes a map of sites to be sampled, the constituents that will be sampled and the frequency of the sampling required. A formal right-of-entry agreement with private landowners will be submitted for approval by the Borrego Water District Board of Directors. A written report will also be submitted on what goals are to be accomplished and how this program achieves those goals. A quarterly/task report will be written and submitted by the consultant to the Borrego Water District and the DWR.

TASK 5: INITIATE PHASE 1 MONITORING

The consultant will initiate the water quality sampling program by visiting each site identified in the plan and collecting a water sample. Sampling protocol will be consistent with the requirements of the Groundwater Quality Monitoring Act of 2001. Wells with pumps already installed in the well will be engaged and a sample taken. Wells without pumps will be pumped with a sample pump or bailed as determined by the plan design criteria. Samples will be delivered to the approved water quality laboratory as prescribed by the plan. When the results are finalized by the laboratory, the consultant will post the results in the database. The results will then be reviewed by the Technical Professional Group and if there are any results that are deemed "out of range" the well will be re-sampled. Once all data is processed, a follow up meeting with local stakeholders will be held to present the results.

Deliverables: The consultant will prepare a map depicting the well locations with the latest sampling data results for presentations to the Technical Professional Group and the stakeholders. Sample results will be provided to the State Water Resources Control Board's GAMA program, as required by the grant guidelines. A quarterly/task report will be written by the consultant and submitted to the Borrego Water District and the DWR.

TASK 6: INITIATE PHASE 2 MONITORING

One year following the phase 1 monitoring project, phase 2 will take place. The consultant will once again initiate the water quality sampling program by visiting each site identified in the plan and collecting a water sample. Sampling protocol will be consistent with the requirements of the Groundwater Quality Monitoring Act of 2001. Wells with pumps already installed in the well will be engaged and a sample taken. Wells without pumps will be pumped with a sample pump or bailed as determined by the plan design criteria. Samples will be delivered to the approved water quality laboratory as prescribed by the plan. When the results are finalized by the laboratory, the consultant will post the results in the database. The results will then be reviewed by the Technical Professional Group and if there are any results that are deemed "out of range" the well will be re-sampled. Once all data is processed, a follow up meeting with local stakeholders will be held to present the results.

Deliverables: The consultant will prepare a map depicting the well locations with the latest sampling data results for presentations to the Technical Professional Group and the stakeholders. Sample results will be provided to the State Water Resources Control Board's

GAMA program, as required by the grant guidelines. A quarterly/task report will be written by the consultant and submitted to the Borrego Water District and the DWR.

TASK 7: FINAL REPORT

The consultant will compile all the necessary data and sampling results to write a final report of the project. The final report will include a professional analysis of the data collected, outline any discrepancies found in the course of the project and detail any future concerns revealed from the project. The Borrego Water District will take possession of all data compiled from the program and continue the annual sampling procedures from this date forward. The data will be provided in software format readily available to the Borrego Water District. The water quality monitoring program will be combined with the District's existing State required sampling programs of the California Department of Public Health and State Water Resources Control Board.

Deliverables: A copy of all digital files created in this project will be submitted to the Borrego Water District. The data will be provided in software format readily available to the Borrego Water District. A final report will be prepared by the consultant and submitted to the Borrego Water District and the DWR.

TASK 8: PRESENTATION TO STAKEHOLDERS AT THE ANNUAL TOWN HALL MEETING

Every year, in the springtime, an annual Town Hall Meeting is held to update the local residents on groundwater management activities accomplished over the past year. This process is outlined in the Groundwater Management Plan adopted in 2002. The consultant will prepare a presentation to be viewed in a public auditorium to a group of 80-100 people. The presentation will provide an overview of the program and present the results of the water quality sampling. The consultant will also include an interpretation of the data and how this new information will be used in the future as the water table continues to decline.

Deliverables: A computer slide presentation and script will be submitted to the Borrego Water District Board of Directors Ad Hoc Committee on the Annual Town Hall meeting two weeks prior to the announced event. The consultant will also present the material to the audience at the Town Hall Meeting.